

CLAIMS

What is claimed is:

1. A method comprising:

storing a solution containing a subset of a group consisting of a metal ion, a complexing agent, an ammonium salt, and a strong base; and

nearer to a time of use in an electroless deposition process, using the solution to form a second electroless deposition solution containing the entire group.
2. The method of claim 1, wherein the subset contains the metal ion, the complexing agent, and the ammonium salt and lacks the strong base, and said using includes introducing the strong base into the solution that was stored.
3. The method of claim 1, wherein the subset contains the metal ion, the complexing agent, and the strong base, and lacks the ammonium salt, and said using includes introducing the ammonium salt into the solution that was stored.
4. An electroless deposition solution formed by the method of claim 1.
5. The method of claim 1:

wherein the metal ion includes a metal ion that is selected from the group consisting of a cobalt ion, a nickel ion, an iron ion, a tungsten ion, a molybdenum ion, a niobium ion, a tantalum ion, and a combination thereof;

wherein the complexing agent includes a carboxylic acid;

wherein the ammonium salt includes an ammonium salt selected from the group consisting of an ammonium halide, an ammonium carboxylate, an ammonium sulfate, and a combination thereof; and

wherein the strong base includes a base selected from the group consisting of a tetralkylammonium hydroxide, sodium hydroxide, and potassium hydroxide.

6. The method of claim 5, wherein the subset contains the metal ion, the complexing agent, and the ammonium salt and lacks the strong base and using includes introducing the strong base into the stored solution.
7. The method of claim 5, wherein the subset contains the metal ion, the complexing agent, and the strong base, and lacks the ammonium salt and using includes introducing the ammonium salt into the stored solution.
8. An electroless deposition solution formed by the method of claim 5.
9. The method of claim 1, wherein the metal ion includes a cobalt ion, the complexing agent includes citric acid, the ammonium salt includes ammonium chloride, and the strong base includes tetramethylammonium hydroxide.
10. The method of claim 9, wherein the subset contains the metal ion, the complexing agent, and the ammonium salt and lacks the strong base and using includes introducing the strong base into the solution that was stored.
11. The method of claim 9, wherein the subset contains the metal ion, the complexing agent, and the strong base, and lacks the ammonium salt and using includes introducing the ammonium salt into the solution that was stored.
12. An electroless deposition solution formed by the method of claim 9.

13. A method comprising:

storing a solution that omits one, two, or three components selected from a group consisting of a metal ion, a complexing agent, an ammonium salt, and a strong base; and

nearer to a time of use in an electroless deposition process, introducing the one, the two, or the three omitted components and a reducing agent into the solution to form an electroless deposition solution.

14. The method of claim 13, wherein the stored solution omits one or two components including the strong base, and said introducing includes introducing the strong base into the solution that was stored.

15. The method of claim 13, wherein the stored solution omits one or two components including the ammonium salt, and said introducing includes introducing the ammonium salt into the solution that was stored.

16. The method of claim 13:

wherein the metal ion includes a metal ion that is selected from the group consisting of a cobalt ion, a nickel ion, an iron ion, a tungsten ion, a molybdenum ion, a niobium ion, and a tantalum ion, and a combination thereof;

wherein the complexing agent includes a carboxylic acid;

wherein the ammonium salt includes an ammonium salt selected from the group consisting of an ammonium halide, an ammonium carboxylate, an ammonium sulfate, and a combination thereof; and

wherein the strong base includes a base selected from the group consisting of a tetralkylammonium hydroxide, sodium hydroxide, and potassium hydroxide.

17. The method of claim 13, wherein the metal ion includes a cobalt ion, the complexing agent includes citric acid, the ammonium salt includes ammonium chloride, and the strong base includes tetramethylammonium hydroxide.
18. An electroless deposition solution formed by the method of claim 17.
19. A method comprising:

storing a solution containing a subset of a group consisting of a cobalt ion, citric acid, ammonium chloride, and tetramethylammonium hydroxide; and

nearer to a time of use in an electroless deposition process, using the solution to form a second electroless deposition solution containing the entire group.
20. The method of claim 19, wherein the subset contains the cobalt ion, the citric acid, the ammonium chloride, and lacks the tetramethylammonium hydroxide and said using includes introducing the tetramethylammonium hydroxide into the solution that was stored.
21. The method of claim 19, wherein the subset contains the cobalt ion, the citric acid, the tetramethylammonium hydroxide, and lacks the ammonium chloride and said using includes introducing the ammonium chloride into the solution that was stored.

22. A method comprising:

storing a solution that omits one, two, or three components selected from a group consisting of a cobalt ion, citric acid, ammonium chloride, and tetramethylammonium hydroxide; and

nearer to a time of use in an electroless deposition process, introducing the one, the two, or the three omitted components and a reducing agent into the solution to form an electroless deposition solution.

23. The method of claim 22, wherein the stored solution omits one or two components including tetramethylammonium hydroxide, and said introducing includes introducing the tetramethylammonium hydroxide into the solution that was stored.

24. The method of claim 22, wherein the stored solution omits one or two components including ammonium chloride, and said introducing includes introducing the ammonium chloride into the solution that was stored.

25. A system comprising:

a first source containing an incomplete electroless deposition solution, the solution including a subset of a group consisting of a metal ion, a complexing agent, an ammonium salt, and a strong base and omitting at least one component of the group;

a second source containing the at least one omitted component; and

a fluid combination device coupled with the first source and the second source to receive the incomplete electroless deposition solution and the at least one omitted

component and to introduce the at least one omitted component into the incomplete electroless deposition solution.

26. The system of claim 25, wherein the fluid combination device comprises a tee.
27. The system of claim 25, wherein the metal ion comprises cobalt, the complexing agent comprises citric acid, the ammonium salt comprises ammonium chloride, and the strong base comprises tetramethylammonium hydroxide.
28. The method of claim 1, further comprising adding a reducing agent to the second electroless deposition solution and using the resultant solution to perform an electroless deposition.
29. The method of claim 22, further comprising adding a reducing agent to the second electroless deposition solution and using the resultant solution to perform an electroless deposition.